Extension of Historical DSM2 Simulation

CH2M HILL

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Background

- US Fish and Wildlife Service is in the process of developing a delta smelt life cycle model.
- CH2M HILL is assisting USFWS with the Delta hydrodynamics in support of the DSLCM development.
- Simulated Delta hydrodynamics, and particle transport and fate under historical conditions using DSM2 for 1990 – 2010 period.

Overview

- CH2M HILL is extending the historical DSM2 simulation to 1960s
- Covering period of US Fish and Wildlife Service fish survey results
- Includes major historical levee breach events
- Validation with historical EC data (obtained from IEP database)
- Coordinating with DWR

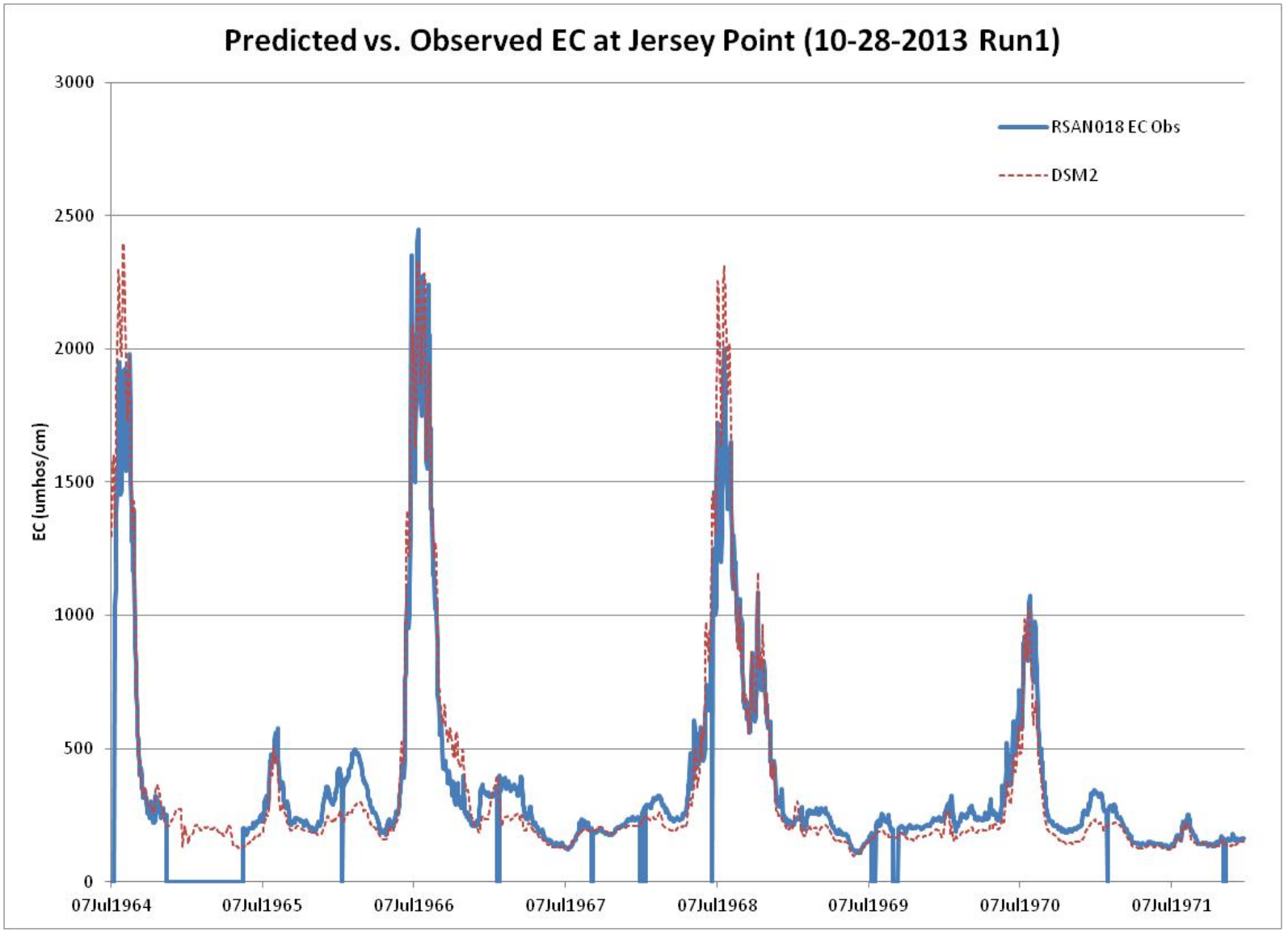
Progress

- Constructed database based primarily on DAYFLOW database for boundary input back to 1955
- Reviewed historic data sources to catalogue historic levee failures and include major events in simulation
- Generated DSS files with gate operations
  - Delta Cross Channel from 1953
  - Clifton Court Forebay from May 1, 1971

Modifications to DSM2

- Clifton Court online in 1971, SWP and BBID diversions moved to Old River prior to 5-1-71
- Minor channel modifications to avoid channel drying (Thomas Paine Slough / Paradise Cut)
- Levee breaches simulated with gates on reservoirs that open with breach and close when levee was restored. Nodal inflow accounts for dewatering of flooded islands

Preliminary Verification Simulation



Next Steps

- Continue Validation
- PTM Simulations
- Coordination with DWR and others involved in similar tasks